

Double-Balanced Mixer

M9E
V3

Features

- LO 1 TO 400 MHz
- RF 1 TO 400 MHz
- IF 0 TO 400 MHz
- LO DRIVE: +27 dBm (NOMINAL)
- HIGH INTERCEPT POINT: +32.5 dBm (TYP.)

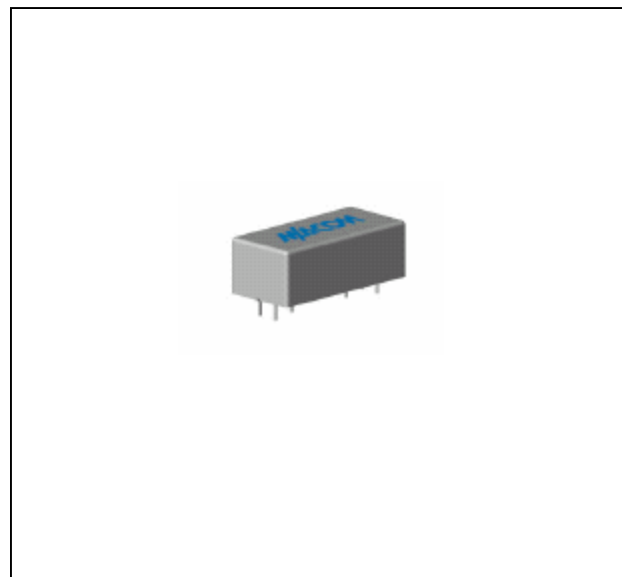
Description

The M9E is a double balanced mixer, designed for use in military, commercial, and test equipment applications. The design utilizes Schottky ring quad diodes and broadband ferrite baluns to attain excellent performance. This mixer can also be used as a phase detector and/or bi-phase modulator since the IF port is DC coupled to the diodes. Environmental screening is available to MIL-STD-883, MIL-STD-202, or MIL-DTL-28837, consult factory.

Ordering Information

Part Number	Package
M9E	Relay Can

Product Image



Electrical Specifications: $Z_0 = 50\Omega$ $Lo = +27$ dBm (Downconverter Application only)

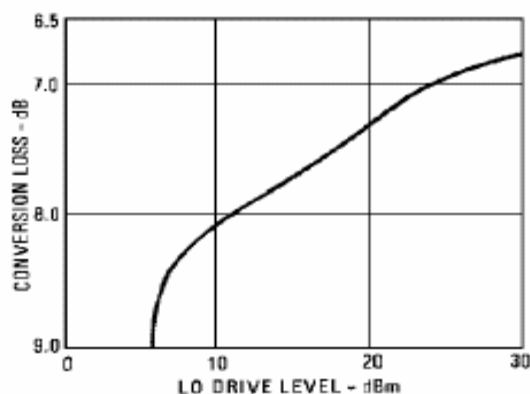
Parameter	Test Conditions	Units	Typical	Guaranteed	
			25°C	0° to 50°C	-54° to +85°C
SSB Conversion Loss & SSB Noise Figure (max)	fR=0.002 to 0.05 GHz, fL=0.002 to 0.05 GHz,	dB	6.0	7.0	7.3
	fi=0.002 to 0.1GHz				
	fR=0.001 to 0.1 GHz, fL=0.001 to 0.1 GHz,	dB	7.0	7.5	7.8
	fi=0.0004 to 0.4GHz				
	fR=0.001 to 0.4 GHz, fL=0.001 to 0.4 GHz,	dB	8.0	9.0	9.3
	fi=0.0004 to 0.2 GHz				
Isolation, L to R (min)	fL = 0.001 to 0.03 GHz	dB	50	45	44
	fL = 0.03 to 0.1 GHz	dB	40	35	34
	fL = 0.1 to 0.4 GHz	dB	30	25	24
Isolation, L to I (min)	fL = 0.001 to 0.03 GHz	dB	55	45	44
	fL = 0.03 to 0.1 GHz	dB	45	40	39
	fL = 0.1 to 0.4 GHz	dB	35	25	24
Isolation, R to I (min)	fL = 0.001 to 0.4 GHz	dB	25		
1 dB Conversion Compression	fL @ +27 dBm	dBm	+20		
Input IP3		dBm	+32.5		

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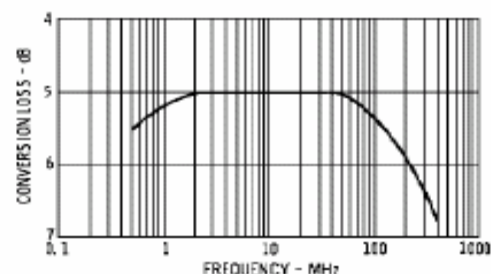
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Typical Performance Curves

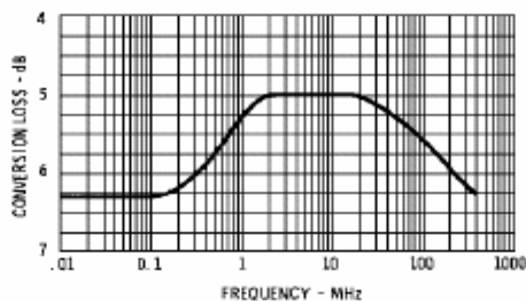
Conversion Loss



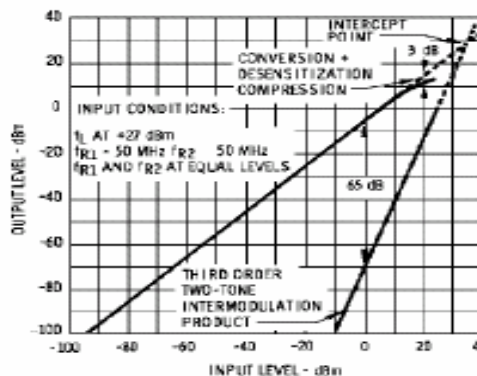
Conversion Loss vs. Input Frequency



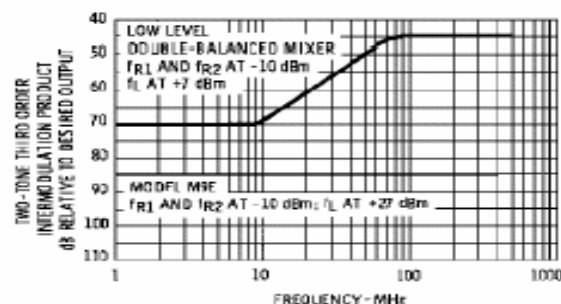
Conversion Loss vs. Output Frequency



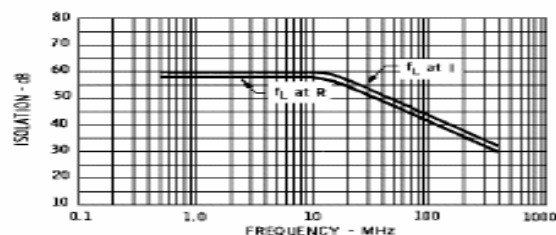
Two-Tone Suppression vs. Input Level



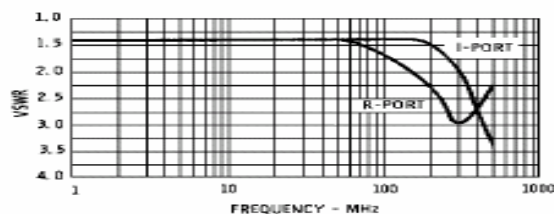
Two-Tone Suppression vs. Input Frequency



Isolation



VSWR



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Absolute Maximum Ratings

Parameter	Absolute Maximum
Operating Temperature	-54 C to +100°C
Storage Temperature	-65°C to +100°C
Peak Input Power	+33 dBm max @ +25°C dBm max @ +100°C
Peak Input Current	200 mA DC

Outline Drawing: Relay Can

